**IN THE CLAIMS:**

Please amend claims 1, 4-7, and 11 as follows:

## LISTING OF CURRENT CLAIMS

Claim 1. (Currently Amended) A method of detecting microorganism cDNA comprising:

(a) amplifying the microorganism cDNA with bioactive primers;

~~(a)~~ (b) hybridizing the **amplified** microorganism cDNA with microorganism-specific probes in hybridization tubes wherein each of the probes is linked to a magnetic bead;

~~(b)~~ (c) transferring hybridization tubes to magnetic wells for washing;

~~(c)~~ (d) adding blocking solution into the tubes;

~~(d)~~ (e) adding ~~avadin~~ avidin enzyme complex or streptavidin enzyme complex into the tubes;

~~(e)~~ (f) performing a washing reaction to remove interfering material by the aid of magnetic field;

~~(f)~~ (g) suspending each magnetic bead;

~~(g)~~ (h) detecting a color change utilizing a luminescence-emission substrate; and

~~(h)~~ (i) comparing the color change in step ~~(g)~~ (h) to a color change of a control sample.

Claim 2. (Previously Presented) The method of Claim 1, wherein the microorganism is *Mycobacterium tuberculosis*.

Claim 3. (Original) The method of Claim 1, wherein the microorganism cDNA are obtained from the PCR amplification mediated by bioactive primers.

Claim 4. (Currently Amended) The method of Claim 1, wherein the streptavidin enzyme complex in the step ~~(d)~~ (e) is streptavidin horseradish peroxidase (SA-HRP).

Claim 5. (Currently Amended) The method of Claim 1, wherein the step ~~(f)~~ (g) suspending magnetic beads is performed by vortexing the tubes.

Claim 6. (Currently Amended) The method of Claim 1, wherein the detection of the step ~~(g)~~ (h) is performed by luminometer or spectrophotometer.

Claim 7. (Currently Amended) The method of Claim 1, wherein the steps (a)-~~(g)~~(h) are performed in the same tube.

Claim 8. (Withdrawn) An apparatus for performing the dissociation of nucleic acid double strands, hybridization, washing, the separation of magnetic beads and thermal control in the same apparatus, comprising:

(a) the means for fitting reaction containers;

(b) the means for controlling the temperature of the containers; and

(c) the means for controlling the magnetic force of the containers, wherein the means for controlling the temperature of the containers are connected to the means for fitting the reaction containers, and the means for controlling the magnetic force of the containers are connected to the means for fitting reaction containers.

Claim 9. (Withdrawn) The apparatus of Claim 8, wherein the means for controlling the temperature of the containers heats the containers to perform the dissociation of nucleic acid double strands according to temperature change.

Claim 10. (Withdrawn) The apparatus of Claim 8, wherein the means for controlling the magnetic force of the containers performs the magnetic change of magnetic bead to facilitate hybridization, washing and the separation of magnetic beads in the containers.

Claim 11. (Currently Amended) A system for performing ~~detecting~~ detection of microorganism cDNA comprising:

(a) a microorganism-specific probe linked to a magnetic bead;

(b) bioactive primers;

(c) ~~avadin~~ avidin enzyme complex or streptavidin enzyme complex; and

(d) enzyme substrate.

Claim 12. (Previously Presented) The system of Claim 11, wherein the bioactive primers are made by reacting a DNA labeling reagent with the primers.

Claim 13. (Previously Presented) The system of Claim 12, wherein the DNA labeling reagent is a compound having a formula:

Fu-BE-D

wherein **Fu** represents a Furocoumarin compound selected from the group consisting of angelicin compound and psoralen compound;

wherein BE represents none or a binding enhancer selected from the group consisting of C4-C12 alkyl, alkyenyl, polyalkylamine and polyethylene glycol; and

wherein D represents a detectable group selected from the group consisting of: biotin, fluorescence, acridinium ester and acridinium-9-carboxamide.

Claim 14. (Previously Presented) The system of Claim 12, wherein the DNA labeling reagent is 9-(4"-(Aminomethyl)-4',5"-Dimethyl-angelicin) acridinium carboxamide.

Claim 15. (Withdrawn) An assay system for detecting microorganisms, the system comprising:

(i) diagnostic kit for detecting microorganism cDNA comprising:

(a) a probe linked to a magnetic bead;

(b) bioactive primers;

(c) avadin enzyme complex or streptavidin enzyme complex; and

(d) enzyme substrate;

(ii) an apparatus for performing the dissociation of nucleic acid double strands, hybridization, washing, the separation of magnetic beads and thermal control in the same apparatus, comprising:

(a) the means for fitting reaction containers;

(b) the means for controlling the temperature of the containers; and

(c) the means for controlling the magnetic force of the containers,

wherein the means for controlling the temperature of the containers are connected to

the means for fitting the reaction containers, and the means for controlling the magnetic force of the containers are connected to the means for fitting reaction containers;

(iii) a magnetic rack to bind the magnetic bead on the wall of the containers; and

(iv) a detector.

Claim 16. (Withdrawn) The assay system of Claim 15, wherein the bioactive primers are made by reacting DNA labeling reagent with the primers.

Claim 17. (Withdrawn) The assay system of Claim 15, wherein the streptavidin enzyme complex in the kit is streptavidin horseradish peroxidase (SA-HRP).

Claim 18. (Withdrawn) The assay system of Claim 15, wherein the assay system differentiates *M. tuberculosis* from *M. marinum*, *M. avium* and *M. intracellulare*.

Claim 19. (Withdrawn) The assay system of Claim 15, wherein the detector is one of a luminometer and a spectrophotometer.

Claim 20. (Withdrawn) The assay system of Claim 15, wherein the DNA labeling reagent is 9-(4"-(Aminomethyl)-4',5"-Dimethyl-angelicin) acridinium carboxamide.